



## Workshop Manual

Fox 2004 ➤ , Fox 2010 ➤ , Fox 2014 ➤ ,  
Gol 2009 ➤ , Gol 2013 ➤ , Gol 2017 ➤ ,  
Golf 1999 ➤ , Golf 2007 ➤ ,  
Golf 2016 ➤ , Golf BR 2018 ➤ ,  
Polo 2003 ➤ , Polo 2007 ➤ ,  
Polo 2012 ➤ , Polo BR 2018 ➤ ,  
Polo Sedan 2003 ➤ ,  
Polo Sedan 2007 ➤ ,  
Polo Sedan 2012 ➤ , Saveiro 2010 ➤ ,  
Saveiro 2014 ➤ , Saveiro 2017 ➤ ,  
SpaceFox 2011 ➤ , Virtus BR 2018 ➤ ,  
Voyage 2009 ➤ , Voyage 2013 ➤ ,  
Voyage 2017 ➤ , up! 2014 ➤ ,  
up! BR 2018 ➤

**Troubleshooting, Mechanical Transmission**

Edition 09.2017



## List of Workshop Manual Repair Groups

### Repair Group

30 - Clutch

34 - Controls, housing



Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.



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## 30 – Clutch

### 1 Complaints related to clutch and clutch control

(VRL010733; Edition 09.2017)



#### WARNING

- ◆ When handling chemicals follow the safety instructions ⇒ *Chemical Products Manual; Rep. gr. 00*
- ◆ Assignment of Chemical Materials ⇒ *Electronic Parts Catalogue "ETKA"*



#### Note

Checking of the clutch drive ⇒ page 10.

Before carrying out any repairs on the clutch, it is always necessary to check the customer's complaint and trace the problem cause. When doing this, check whether the complaint is related to the clutch or the selection mechanism adjustment is causing the problem.

Repair action indicated in this troubleshooting programme must be carried out as described in the respective repair manuals.

| Complaints  | Fault description   | Corrective action  |
|---|---|--|
| The clutch pedal does not return to its initial position. | ◆ Air in the clutch system pipes, low brake fluid reservoir level     | – Top up the reservoir with brake fluid, and bleed the clutch system.    |
|   | ◆ The master cylinder or the slave cylinder are getting stuck.        | – Replace defective parts, bleed clutch system.                          |
|   | ◆ Pipes, master cylinder or slave cylinder are leaking                |  |
|   | ◆ Defective return spring (if incorrectly fitted).                    | – Reposition the return spring. Replace the return spring, if necessary. |
|   | ◆ Actuator elements in the clutch case are gripped.                   | – Clean and lubricate actuators. Replace actuators, if necessary.        |
|   | ◆ The clutch bearing is askew in the guide tube, causing wear.        | – Replace guide tube and clutch bearing.                                 |
|   | ◆ The diaphragm spring for the clutch plate pressure plate is broken. | – Replace the clutch plate.  |

| Complaints  | Fault description  | Corrective action   |
|---|--|---|
| The drive pressure on the clutch pedal is very high | ◆ The clutch pedal is getting stuck.<br>– Before checking, separate the master cylinder from the clutch pedal. | – Clean and lubricate the bearings. Replace the bearings, if necessary. |



| Complaints | Fault description   | Corrective action   |
|------------|---|---|
|            | ♦ The limiting spring's housing is getting stuck; the limiting spring is defective              | – Clean and lubricate the housing. Replace the housing, if necessary. Replace the limiting spring.  |
|            | ♦ Return spring, if incorrectly adjusted (very strong).   | – Reposition return spring  |
|            | ♦ The clutch's release pressure increases due to wear of packings (linings) of the clutch disc. | – Explain the situation to the customer (the release pressure grows as the wear increases)<br>– Replace the clutch plate if the distance between the plate surface to the rivet is less than 0.1mm  |
|            | ♦ The actuator element in the clutch case is getting stuck.                                     | – Clean and lubricate actuators. Replace actuators, if necessary  |
|            | ♦ The clutch bearing is askew in the guide tube, causing wear.                                  | – Replace the defective parts.  |
|            | ♦ The contact surface between the clutch bearing and the release lever is worn/marked           | – Replace the defective parts.  |
|            | ♦ The plate's pressure plate spring has incorrect specification.                                | – Obtain the appropriate part according to the ⇒ Electronic Parts Catalogue "ETKA" .  |
|            | ♦ The clutch disk gets stuck / is stuck in the hub groove.                                      | – Check possible damage in the hub grooves (burrs). Replace the clutch disc, if necessary.<br>– Remove corrosion and lubricant deposits in the hub splines and input shaft, and lubricate with Lubricating grease - G 000 100- . Move the clutch disc forwards and backwards, and remove excess grease. |

| Complaints                        | Fault description  | Corrective action   |
|-----------------------------------|--|---|
| Noise when stepping on the clutch | ♦ Clutch pedal gets stuck, points are out of alignment.  | – Clean and lubricate the bearings. Replace the bearings, if necessary.           |
|                                   | ♦ Limiting spring dry, stuck or misaligned   |   |
|                                   | ♦ The return spring (if incorrectly installed) makes noises.   | – Grease the bearing points.  |
|                                   | ♦ Defect in the clutch release bearing; the release bearing's guide tube is not OK; contact surface is worn. | – Always replace noisy release bearings.<br>– Replace the guide tubes if damaged. |



| Complaints | Fault description  | Corrective action   |
|------------|--|---|
|            | <p>◆ Defect in the contact surface (diaphragm spring ends) of the plate's pressure plate (bent, broken). Clutch bearing decentralised.</p> | <ul style="list-style-type: none"> <li>– Replace the clutch plate.</li> <li>– Verify and, if necessary, replace the clutch bearing and the guide tube.</li> <li>– Check the position of the release lever.</li> <li>– Check the centralisation pins.</li> </ul> |
|            | <p>◆ Defect in the crankshaft needle bearing (if fitted). Engine/transmission misaligned.</p>  | <ul style="list-style-type: none"> <li>– Replace, lubricate with Lubricating grease - G 000 100-.</li> <li>– Check the centralisation pins.</li> </ul>  |
|            | <p>◆ Clutch disc incorrectly installed.</p>  | <ul style="list-style-type: none"> <li>– Correct the installation position.</li> </ul>  |
|            | <p>◆ The wrong clutch disc was installed.</p>  | <ul style="list-style-type: none"> <li>– Obtain the appropriate clutch disc according to the → Electronic Parts Catalogue "ET-KA".</li> </ul>   |

| Complaints  | Fault description  | Corrective action   |
|---|--|---|
| There are noises when a forward or reverse gear is selected; the selection mechanism gets stuck; it is not possible to select a gear; the clutch is not working | <p>◆ The brake fluid level is too low.</p>   | <ul style="list-style-type: none"> <li>– Check the system, top up brake fluid, bleed the system.</li> </ul>               |
|   | <p>◆ There is air in the system, the clutch did not come out completely.</p>                                     |   |
|   | <p>◆ Leak in the master/slave cylinder and tubes, line is too elastic.</p>                                       | <ul style="list-style-type: none"> <li>– Replace the defective part, top up brake fluid, and bleed the system.</li> </ul> |
|   | <p>◆ Clutch pedal has not enough travel (carpet or mat under pedal), the clutch is not completely depressed.</p> | <ul style="list-style-type: none"> <li>– Explain the situation to the customer.</li> </ul>                                |



| Complaints | Fault description  | Corrective action  |
|------------|--|--|
|            | ◆ Plate's pressure plate is uneven due to defective installation; clutch disc is bent due to incorrect handling. | <ul style="list-style-type: none"><li>– Check parts, replace if necessary, note the position of the centralisation pins.</li><li>– If the problem persists, check the clutch disc hub splines in the input shaft for ease of movement, check the crankshaft needle bearing; carry out repairs to the transmission, if necessary.</li></ul> |
|            | ◆ Clutch plate spring ends broken or bent (defective installation, clutch bearing misaligned).                   | <ul style="list-style-type: none"><li>– Replace the clutch plate.</li><li>– Verify and, if necessary, replace the clutch bearing and the guide tube.</li><li>– Check the centralisation pins.</li></ul>  |
|            | ◆ The clutch disc is very thick.   | <ul style="list-style-type: none"><li>– Obtain the appropriate clutch disc according to the ⇒ Electronic Parts Catalogue "ET-KA".</li></ul>  |
|            | ◆ Packing (lining) gripped/locked on the flywheel (parked for a long time, high humidity level).                 | <ul style="list-style-type: none"><li>– File lightly the clutch disc's friction surfaces or, if there is a lot of corrosion, replace the part.</li></ul>   |





| Complaints | Fault description   | Corrective action   |
|------------|---|---|
|            | <p>◆ Clutch disc gets stuck in, adheres to the groove. Corroded hub, damaged during installation. Hub profile misaligned on one side.</p>   | <ul style="list-style-type: none"> <li>– Check possible damage in the hub grooves. Replace the clutch disc, if necessary.</li> <li>– Remove the corrosion and grease deposits of the hub and the axle. Lightly lubricate the axle with Lubricating grease - G 000 100-.</li> <li>– Move the clutch disc forwards and backwards, and remove excess grease.</li> <li>– Check the centralisation pins position if the hub profile is misaligned.</li> <li>– Check and, if necessary, replace the clutch bearing, the guide tube, the clutch plate and the needle bearing.</li> </ul> |
|            | <p>◆ The plate's pressure plate does not lift high enough (incorrect clutch plate).</p>   | <ul style="list-style-type: none"> <li>– Obtain the appropriate part according to the ⇒ Electronic Parts Catalogue "ET-KA".</li> </ul>  |
|            | <p>◆ Defect in the crankshaft needle bearing (if fitted). The input shaft is lifted by the crankshaft whenever the clutch is pressed.</p>   | <ul style="list-style-type: none"> <li>– Replace the needle bearing and lubricate with MoS<sub>2</sub> grease.</li> <li>– Check the centralisation pins.</li> <li>– Check the input axle.</li> </ul>  |
|            | <p>◆ Engine/transmission excessively misaligned (no centralisation pins), causing the clutch disc support plate to bend. Defect in the crankshaft needle bearing (if fitted).</p> | <ul style="list-style-type: none"> <li>– Insert the centralisation pins before installing the transmission.</li> <li>– Check the clutch disc, the plate's pressure plate and the needle bearing for damage, and replace as necessary.</li> </ul>  |



| Complaints | Fault description  | Corrective action   |
|------------|--|---|
|            | <ul style="list-style-type: none"> <li>◆ Packings (linings) displaced due to excessive speed (shifting downwards at very high speed).</li> <li>◆ Packings are displaced because the clutch skids too much as it pulls away.</li> </ul> | <ul style="list-style-type: none"> <li>– Replace the clutch disc. Explain the situation to the customer.</li> </ul> |

| Complaints   | Fault description  | Corrective action   |
|--|--|---|
| The load assembly vibrates when the engine speed accelerates or decelerates suddenly | ◆ The assembly is fitted very loosely.   | – Explain the situation to the customer. Obtain the appropriate assembly according to the ⇒ Electronic parts catalogue "ET-KA", replace if necessary.   |
|  | ◆ The engine oscillates (does not operate smoothly).   | – Check and correct the engine assembly.  |
|  | ◆ The clutch disc is installed with a defective absorber spring (to prevent loose gears from oscillating). | – Explain the situation to the customer.  |
|  | ◆ Defect in the crankshaft needle bearing (if fitted). Engine/transmission misaligned.                     | <ul style="list-style-type: none"> <li>– Replace the needle bearing and lubricate with MoS<sub>2</sub> grease.</li> <li>– Check the centralisation pins and replace, if necessary.</li> </ul> |

| Complaints                                     | Fault description   | Corrective action   |
|--|---|---|
| The clutch skids, with no or little propelling | ◆ The plungers of the master and slave cylinders do not return to their initial position. | <ul style="list-style-type: none"> <li>– Replace the master/slave cylinders.</li> <li>– Replace the brake fluid, bleed the system.</li> </ul> |
|  | ◆ Incorrect clutch disc, incorrect clutch plate.  | – Obtain the appropriate clutch disc and clutch plate according to the ⇒ Electronic parts catalogue "ET-KA".                                  |



| Complaints | Fault description  | Corrective action   |
|------------|--|---|
|            | <p>◆ Clutch disc worn or burnt; plate's pressure plate overheated, scratched; plate's pressure plate bent due to defective installation, insufficient contact pressure on the plate's pressure plate, steering fault, normal wear.</p> | <ul style="list-style-type: none"> <li>– Replace the clutch disc.</li> <li>– Replace the clutch plate.</li> <li>– Explain the situation to the customer.</li> </ul>   |
|            | <p>◆ Elements of the actuator in the transmission are getting stuck. The pedal mechanism is hard.</p>  | <ul style="list-style-type: none"> <li>– Clean and lubricate the bearings. Carry out the necessary repairs.</li> </ul>  |
|            | <p>◆ Clutch disc, plate's pressure plate, flywheel have oil in excess. The sealing of the engine or transmission shaft is defective. There is grease on the contact surfaces due to excess grease in the hub.</p>                      | <ul style="list-style-type: none"> <li>– Replace the clutch disc.</li> <li>– Clean the contact surfaces, the plate's pressure plate and the flywheel.</li> <li>– Replace the shaft seal, remove excess of the grease of the input shaft.</li> </ul> |
|            | <p>◆ Clutch disc incorrectly installed.</p>  | <ul style="list-style-type: none"> <li>– Correct installation, check clutch disc, and replace if necessary.</li> </ul>  |
|            | <p>◆ The flywheel is very worn or there is too much erosion on the packing's contact surface.</p>  | <ul style="list-style-type: none"> <li>– Obtain the appropriate part according to the ⇒ Electronic Parts Catalogue "ET-KA".</li> <li>– Check the clutch disc, the clutch plate, replace if necessary.</li> </ul>                                    |
|            | <p>◆ Slave cylinder, clutch bearing are leaking.</p>   | <ul style="list-style-type: none"> <li>– Replace the slave cylinder with the clutch bearing.</li> </ul>   |



| Complaints                                    | Fault description  | Corrective action   |
|---|--|---|
| The clutch vibrates,<br>The assembly vibrates | ◆ There is air in the system, master/slave cylinder is defective.  | <ul style="list-style-type: none"><li>– Replace the defective part.</li><li>– Check the brake fluid level, bleed the system, check leaks.</li></ul>   |
|   | ◆ The engine does not operate properly   | <ul style="list-style-type: none"><li>– Check and correct the engine assembly.</li></ul>  |
|   | ◆ Drive fault, pulling away speed very low.  | <ul style="list-style-type: none"><li>– Explain the situation to the customer.</li></ul>  |
|   | ◆ The wrong clutch disc was installed.   | <ul style="list-style-type: none"><li>– Obtain the appropriate clutch disc according to the ⇒ Electronic Parts Catalogue "ET-KA".</li></ul>   |
|   | ◆ The assembly is very loosely fitted and misaligned.  | <ul style="list-style-type: none"><li>– Obtain the appropriate part according to the ⇒ Electronic Parts Catalogue "ET-KA".</li></ul>  |
|   | ◆ Clutch packing (lining), plate's pressure plate contact surface and flywheel have excess oil (oil leaking from the clutch case). | <ul style="list-style-type: none"><li>– Check the sealing of the transmission input shaft or of the crankshaft, replace as necessary.</li><li>– Replace the clutch disc, clean the plate's pressure plate and the flywheel.</li></ul> |
|   | ◆ The clutch bearing is askew in the guide tube, gripped (pressure on one side on the clutch plate diaphragm spring).              | <ul style="list-style-type: none"><li>– Replace the clutch bearing and the guide tube.</li><li>– Check the actuator elements and the bearings of these elements.</li></ul>  |



| Complaints | Fault description   | Corrective action   |
|------------|---|---|
|            | <ul style="list-style-type: none"> <li>◆ The contact surface for the plate's pressure plate only lifts on one side due to the skewed position of the release bearing.</li> <li>◆ The housing for the plate's pressure plate got bent during assembly. The contact surface of the plate's pressure plate has only one side lifted up.</li> </ul> | <ul style="list-style-type: none"> <li>– Check the contact surface of the clutch packing with the fly-wheel, the plate's pressure plate and the diaphragm spring; replace the clutch plate if necessary.</li> <li>– Replace the clutch bearing and the guide tube.</li> </ul>   |
|            | <ul style="list-style-type: none"> <li>◆ The input shaft has excess grease (traces of grease on the clutch disc, plate's pressure plate and fly-wheel).</li> </ul>  | <ul style="list-style-type: none"> <li>– Clean the grease from the plate's pressure plate and from the fly-wheel, and replace if there are signs of damage (vibration marks, overheating signs, scratches).</li> <li>– Remove grease traces from the hub and the shaft, lubricate lightly the shaft with Lubricating grease - G 000 100- .</li> <li>– Move the clutch disc forwards and backwards, and remove excess grease.</li> </ul> |

| Complaints  | Fault description  | Corrective action  |
|---|--|--|
| Thumping »noise« when the clutch pedal is in rest position. | <ul style="list-style-type: none"> <li>◆ Idling / primary shaft have sudden vibrations. The cogs rattle. The clutch disc's absorber spring is broken.</li> </ul> | <ul style="list-style-type: none"> <li>– Explain the situation to the customer.</li> <li>– Replace the clutch disc.</li> </ul> |

| Complaints         | Fault description  | Corrective action  |
|--------------------|--|--|
| Noises when idling | <ul style="list-style-type: none"> <li>◆ The clutch disc's absorber spring is broken.</li> </ul> | <ul style="list-style-type: none"> <li>– Replace the clutch disc.</li> </ul> |



| Complaints | Fault description  | Corrective action  |
|------------|--|--|
|            | ♦ The clutch disc was installed without the absorber spring (vibration when idling). | – Install the clutch disc with the absorber spring.  |
|            | ♦ The plate's pressure plate is bent, broken or out of balance.                      | – Replace the clutch plate.  |
|            | ♦ The engine oscillates (does not operate smoothly).                                 | – Check engine assembly and correct as necessary.  |
|            | ♦ Wide misalignment of engine/transmission (no centralisation pins).                 | – Insert the centralisation pins before installing the transmission.                               |
|            | ♦ The intermediate plate is touching the flywheel.                                   | – Assemble the intermediate plate on the sealing flange and position it on the localisation tubes. |

## 1.1 Checking the clutch drive

1. Check the brake fluid level in the reservoir. While doing that, check whether the clutch's hydraulic system has its own chamber!

2. Check possible external leaks:

- ♦ Master cylinder
- ♦ Slave cylinder
- ♦ Tubes/hoses assembly
- ♦ Supply hose
- ♦ Connecting points (clip installation and threaded connections), including in areas that cannot be seen.

External leak symptoms are, for example, fluid traces in or on the noise muffler under the transmission.

3. Check the route of the tubes/hoses assembly (circuit correctly fastened). The tubes/hoses assembly cannot be twisted or compressed.

4. The pedal's return function must not be obstructed by additional mats or by mats stuffed under it.

5. Depress the clutch pedal. To do this, the pedal must be depressed and held in five different positions along its entire travel for approximately 20 seconds (to test different application pressures in the hydraulic system). Next, a second person checks whether any fluid is leaking at the points mentioned in item 2. The first person also checks whether the clutch pedal falls by itself when the pressure is maintained.

6. Remove the slave cylinder and check for brake fluid presence in the bellows.



7. If all tests appear to be "OK" or if item 6 tests positive, replace the slave cylinder.



**Note**

*In transmissions in which the slave cylinder and the clutch bearing form one unit, the transmission must be removed.*



## 34 – Controls, housing

### 1 Complaints related to the selection mechanism



#### WARNING

- ◆ *When handling chemicals follow the safety instructions ⇒ Chemical Products Manual; Rep. gr. 00*
- ◆ *Assignment of Chemical Materials ⇒ Electronic Parts Catalogue "ETKA"*

Before carrying out any repairs on the selection mechanism, it is always necessary to check the customer's complaint and trace the problem cause. While doing this, check whether the complaint's cause can in fact be traced to the selection mechanism or to its adjustment. It may be necessary to check whether the complaint's cause lies in the clutch and in the clutch drive ⇒ [page 1](#).

Repair actions listed in this troubleshooting programme must be carried out as described in the relevant repair manuals.

| Complaints  | Fault description  | Corrective action  |
|---|--|--|
| There are noises when a forward or reverse gear is selected; the selection mechanism gets stuck; it is not possible to select a gear; the clutch is not working | ◆ Selection mechanism adjustment.  | – Checking and correcting.   |
|   | ◆ The selection mechanism is not lubricated or is misaligned.  | – Grease the selection mechanism and replace defective parts.  |
|   | ◆ Defect in the crankshaft needle bearing (if fitted). The input shaft is lifted by the crankshaft whenever the clutch is pressed. | – Replace the needle bearing and lubricate with grease - G 000 100- .<br>– Check the centralisation pins and replace, if necessary.<br>– Check the input axle. |
|   | ◆ Defect in the transmission's synchronization and/or selection mechanism.   | – Carry out repairs to the transmission.   |

| Complaints  | Fault description  | Corrective action  |
|---|--|--|
| Thumping »noise« when the clutch pedal is in rest position. | ◆ Idling / primary shaft have sudden vibrations. The cogs rattle. The clutch disc's absorber spring is broken. | – Explain the situation to the customer.<br>– Replace the clutch disc. |